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DIPTERA

SPHAEROCERIDAE (BORBORIDAE, CYPSELIDAE)

BY

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Owing to the kindness of Mr. E. SÉGUY, of the Muséum national d'Histoire naturelle, I have had the privilege of studying the Sphaerocerid flies obtained by Dr JEANNEL on the Mission de l'Omo. Nearly all the specimens were captured in the immediate neighbourhood of Mount Elgon (4.335 m.). This mountain rises like an island from the surrounding tropical country and the fauna appears to have some of the characteristics of an oceanic island. This is especially true of the long series of apterous species found in the zone of tree haeaths, above the 3.000 m. line. At a lower level, the species are partly cosmopolitan forms, partly novelties which, however, may well prove to be much more widely spread in Africa. There are already indications that the Sphaerocerid fauna is closely allied to that of the Abyssinian highlands, partly described by DUDA (1925) and partly studied personally from material collected by Dr Hugh SCOTT.

Gen. **LEPTOCERA** Olivier (1813).

Leptocera (s. str.) **curvinervis** (Stenhammar)

Kenya : 19 ♂♂ 13 ♀♀ Elgon Saw mill, E. side Mount Elgon, camp II, 2.470 m., December ; — 5 ♂♂ 3 ♀♀ Suam Fishing Hut, E. side Mount Elgon, 2.400 m., March ; — 18 ♂♂ 8 ♀♀ Camp I, E. side Mount Elgon, 2.400 m., December.

This is a cosmopolitan species already recorded by DUDA (1925, p. 50) from New Guinea, Java, Formosa, India, Ceylon, Europe, various parts of Africa (N. E. and S.) and the Seychelles.

Leptocera (s. str.) **melanaspis** (Bezzi) var. **velutina**, n. var.

Male. Agrees with the redescription by Duda (1925, p. 59) except: — No minute bristles between the paired acrostichals. Mesonotum dull black, with all the bristles arising from light grey spots. Type ♂: Kenya, Elgon Saw mill, E. side Mount Elgon, camp II, 2,470 m.

In typical *melanaspis*, the thorax is brown with four yellow stripes in front and two black ones behind. The present specimen seems to be identical except for the characters noted, and should be regarded as a variety until more material is available.

In the absence of the minute bristles between the acrostichals the variety would not run down in Duda's key (1925, p. 15). It would run out at *L. paragnrolimbata* Duda (of Formosa), but, amongst other characters, the distribution of the black and grey markings of the scutellum is different.

The typical form of *L. melanaspis* is recorded from Kinchassa (Africa), Uganda and Natal.

Leptocera (s. str.) **elgonensis**, n. sp.

Very close to *L. fontinalis* (Fallen, 1827) as redescribed by DUDA (1918, p. 70).

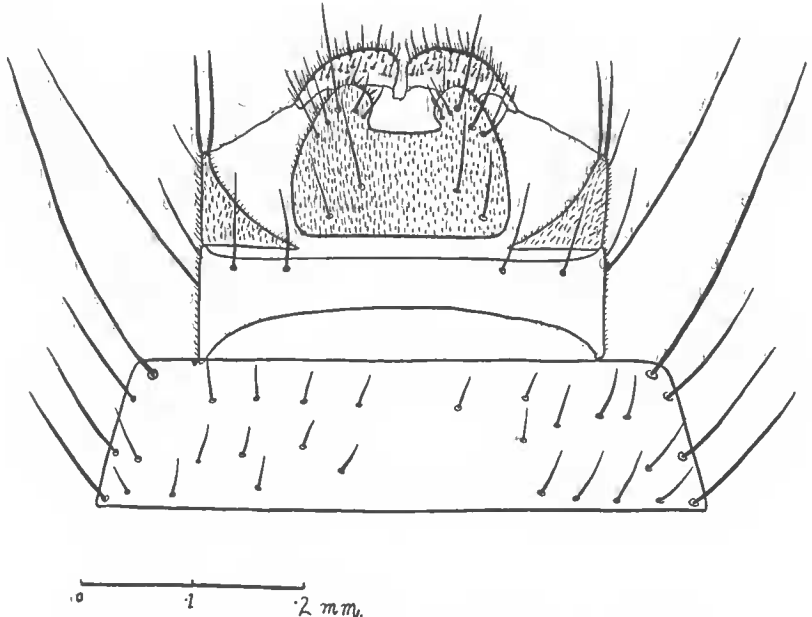


Fig. 1. Dorsal view of segments 8-10 of *Leptocera fontinalis*.

Size a little smaller, length 1,75 — 2,25 mm. (*fontinalis* 2-2,75 mm.);

arista a little longer haired, about as in *L. oldenburgi* Duda; wings rather more darkened than in typical *fontinalis*; scutellum with the preapical marginal bristles rising from a point a little more on the disc and nearer the preapical bristles.

Male. Genitalia retracted, with long woolly, pale-tipped hairs at ventral edge (not so numerous or dense as the black hairs of *L. caenosa* Rdi.); fifth sternite with similar hairs along the discal part of its apical margin; fourth sternite with some rather long black bristles on its disc.

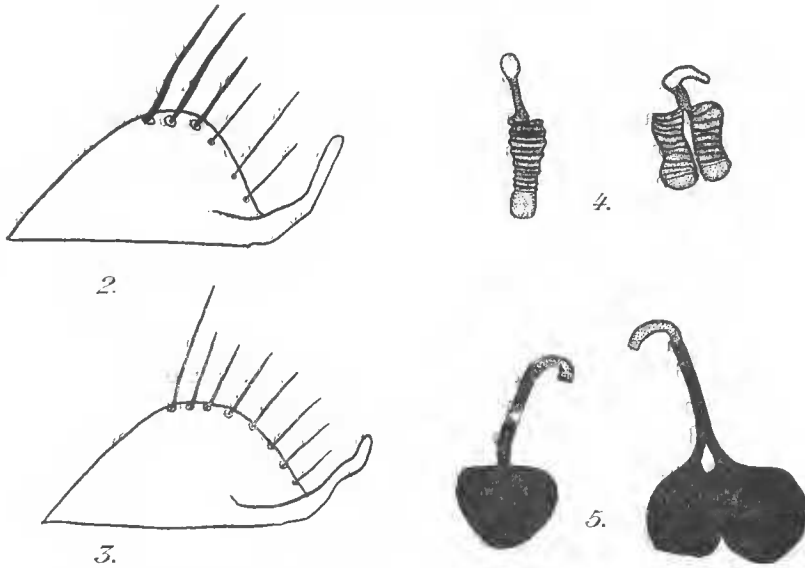


Fig. 2. Lateral lobe (left) of eighth sternite of *Leptocera fontinalis*. — Fig. 3. The same of *L. elgonensis*. — Fig. 4. Spermathecae of *L. fontinalis* (the single one lies on the right). — Fig. 5. The same of *L. elgonensis*.

Female. Genitalia in the dry state not noticeably different from those of *L. fontinalis*. When dissected out (fig. 1) differing only in having the bristle-comb of the lateral pieces of the eighth tergite (figs 2 and 3) weaker, with the two innermost (dorsal) bristles not markedly stronger than the others; spermathecae (figs. 4 and 5) long and narrow (not spherical), longer than their stalks (i. e. proximal part of the duct), surrounded by a spiral thickening (not opaque black).

Type ♀: Kenya, Suam Fishing Hut, E. side Mount Elgon, 2,700-2,800 m., March; — allotype ♂ Elgon Saw mill, E. side Mount Elgon, camp II, 2,470 m., Dec.; — paratypes 1 ♂ 2 ♀♀ with the same data as type; — 1 ♀ Forest on Mount Elgon E. Side, 2,700-2,800 m.; — 1 ♂ Marakwet, Campi Cherangani, 3,000 m., March.

Differs from *L. Oldenburgi* Duda and *L. caenosa* Rdi. in having R_{4+5}

more strongly bent forwards. *L. Kovacsi* (Duda, 1925), from Abyssinia, has very different male genitalia, the parts of which are large and always exposed. In *L. fontinalis* Fall., the male genitalia and fifth sternite lack the woolly hairs and the bristles of the disc of the fourth sternite are a little shorter and less numerous.

In DUDA's key (1925, p. 15) the new species runs down to couplet 49 (p. 24) and there does not agree with either alternative.

***Leptocera (Rachispoda) pseudoocisetosa* (Duda, 1925).**

3 ♂♂ 7 ♀♀ S. Ethiopia, shores of L. Rudolf, Nanoropus, 565 m., January : — 1 ♂ Madagascar, Prov. Analalava, Maromandia (R. Decary).

This species was previously known only from Formosa, Java, Philippines and Australia, but the specimens agree perfectly with Duda's original description (1925, p. 27).

As regards the use of the generic name *Rachispoda* Liroy, Dr Friedrich HENDEL has published a criticism of my work dealing with the British species (HENDEL, 1931). Some of his criticisms seem to me to be justified and, in particular, I accept his corrections of the names I applied to the head-bristles.

As regards the name *Nerea* R. D. which he holds is an earlier name for *Rachispoda*, it is probable that *Nerea riparia* R. D. is a member of this subgenus, but it might be any one of at least three species (viz. *lutosa*, *palustris* and *limosa*). It appears to me inconvenient to retain subgeneric names of which the characters of the typical species are so uncertain.

***Leptocera (Rachispoda) aequalitarsis* (Duda, 1925).**

1 ♂ S. Ethiopia, shores of Lake Rudolf, Nanoropus, 565 m., Jan.

This specimen agrees perfectly with the description given by DUDA (1925, p. 24) of *L. aequalitarsis* of Abyssinia.

A female *Leptocera* of this subgenus runs near to *L. aequalitarsis* but there are two rows of microchaetes between the acrostichals and the insect is a little larger. In view of its bad condition it cannot as yet be dealt with. It was found in Kenya, Rift Valley, Campi ya moto, 1,900 m.

***Leptocera (Rachispoda) subtinctipennis* (Brunetti, 1913).**

1 ♀ Mount Elgon E. side, Camp I de l'Elgon, 2,400 m., Dec. ; — 1 ♂ 6 ♀♀ Turkana, West Suk, near Lokitanyalla, 1,200 m. ; — 1 ♀ Turkana, West Suk, Kacheliba, 1,300 m. (the last named specimen is atypical in having the top of the head entirely black).

DUDA (1925, p. 37) records this species from Java, Formosa, Annam, Abyssinia and Uganda.

Leptocera (Opacifrons) coxata (Stenhammar, 1854).

1 ♂ E. side Mont Elgon, Camp I de l'Elgon, 2,100 m., Dec. ; — 1 ♀ Kenya, Turkana, West Suk, near Lokitanyalla, 1,200 m.

This species has already been recorded by DUDA (1925, p. 70) from Formosa, Europe, Abyssinia and Uganda and by SPULER (1924) from the U. S. A.

Leptocera (Limosina) opaca (Duda, 1925).

2 ♂♂ 2 ♀♀ Kenya, Marakwet, Campi Cherangani, 3,000 m., March. I have also examined 1 ♂ E. Cape Prov., Katberg 1,230 m., Dec. 1932 (R. E. Turner), (Brit. Museum).

DUDA (1925, p. 180) described this species from a single female captured on Kilimandjaro. The females from Kenya agree closely with his description except that on the mid tibia there is a small postero-ventral bristle at $3/4$. The males have a remarkably modified abdomen.

Male. Resembles the female except in the following particulars : — Genitalia rather small, two long bristles on each side of anus above, outer forceps at apex suddenly narrowed and produced into small spikes. Pregenital sternite highly modified, very convex, the sides curved upwards, so that the plate forms two-thirds of a cylinder ; seen from behind the margin is cut out in a curve deeper than a semicircle, the edge of this emargination being provided with short fine bristles and the angles of emargination with a tuft of long dense ones.

Leptocera (Limosina) piscina, n. sp.

Male. Black, head, thorax and abdomen extraordinarily shining ; legs and halteres entirely bright yellow-testaceous. Length 2,25 mm.

Head on each side with one long vibrissa and no jowlar bristle half as long. Antennae rather well separated, head between them quite flat, arista very long, about five times as long as antenna, with rather short hairs. Three pairs of interfrontals, vertex with only very narrow duller areas separating the large central shining area from the shining plates from which the inferior orbitals arise. One strong and two very minute humeral bristles ; behind the suture two pairs of moderately strong dorsocentral bristles between which the rather widely spaced acrostichals are in four rather irregular rows ; sternopleuron (VEs_2) dull, with one strong bristle ; scutellum a little longer than broad, with four bristles, the apical pair one and a half times as long as the scutellum. Wings (fig. 6) with first section of costa short-haired, basal pair of bristles long and of equal size ; second sector of costa a little shorter than the third, costa scarcely produced beyond R_{4+5} ; R_{2+3} straight, only just before its apex curved into the costa ; R_{1+2} nearly straight, last section very weakly sinuate, the curve forwards just before its apex being more

noticeable, meeting costa at about wing-tip; production of M_{3+4} beyond *im* rather strong, as long as *im*, cell rather narrow; rudimentary anal vein weakly divergent from M_{3+4} ; alula very small and narrow. Fore legs simple, femora rather thick with long posteroventral and shorter posterodorsal bristles. Mid femora with a regular row of short ventral bristles from base to near apex, with a rather strong though short anterior bristle at $3/4$ and two weaker ones beyond it. Mid tibiae with a pair of strong dorsal bristles (anterior and posterior) at $1/2$, the anterior one being surmounted by a small one, another strong dorsal pair just before the apex, the anterior one being a little nearer the apex than the posterior one and being surmounted by two small



Fig. 6. Wing of *Leptocera piscina*, n. sp.

bristles, ventrally with no median or apical bristle but with an anteroventral comb of microscopic thorns and a row of 5-6 long posteroventral hairs along apical quarter. Mid basitarsus with only fine bristly hairs beneath, rather long, as long as half the tibia, but a little shorter than the next two segments together. Hind legs simple. Abdomen basally depressed, becoming cylindrical posteriorly, sternites very broad, the fifth with a small subangular apical emargination and a little way on each side of this a flat plate of 3-4 agglutinated long straight bristles; genitalia large, anus subcircular, dorsally nearly bare but below with numerous long bristles and hairs on each side; a reddish spoon-shaped object and a small black hook directed to the left project below. Type ♂: Kenya, Suam Fishing Hut, E. side Mount Elgon, 2,400 m., March.

In the male sex this species is easily recognisable in view of the modified mid tibiae and fifth sternite. In Duda's key (1925, p. 153) it runs down to couplet 47 (*nana* and *plumbea*) but differs from both species there in its narrow alula. The species may perhaps find a place in the group of *L. plumosula*, defined by me (1930, p. 299).

Leptocera (*Limosina*) *cherangani*, n. sp.

Male. Black, whole body very shining; palpi yellow, antennae and front third of vertex reddish brown; legs black, tarsi and junction of tibiae and femora paler; halteres white; wings hyaline. Length 2.0 mm.

Head on each side with one long vibrissa, the largest jowlar bristle only

one third as long. Antennae with the bases moderately well-separated, facial "knob" little developed, third segment rather large, arista very long, six times as long as antennae or one and a half times the width of the vertex including eyes, with moderately long hairs; three pairs of interfrontals, dull areas between them and orbits more shining than usual and rather narrow, other head bristles normal. Thoracic bristles nearly all destroyed in this specimen but one posterior pair of very strong dorsocentrals, microchaetes hardly developed, the surface being rather pollinose (as in *Borborus*); sternopleuron (VEs₂) moderately shining with one long bristle; scutellum as long as broad, with four bristles (only stumps visible). Wings (fig. 7)

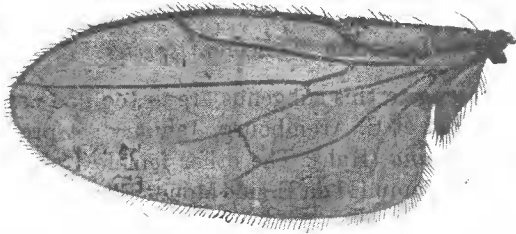


Fig. 7. Wing of *Leptocera cherangani*, n. sp.

with first section of costa short-haired, one basal pair of long bristles; second sector of costa as long as third, costa not extending beyond R_{4+5} ; R_{2+3} straight, only moderately curved onto costa just before they meet; R_{4+5} straight, a little bent towards the costa just where they meet, which is just anterior to the apex of wing; cell moderately broad, cross-vein *im* not quite half as long as distance between *im* and *rm*, M_{1+2} produced beyond the cell as a very weak vein half the distance to the termen, M_{3+4} at right angles to *im* and produced beyond it half way to termen; anal vein diverging from M_{3+4} in a regular curve; alula small and narrow. Fore legs simple, fore femora ventrally with long hairs at base, about four bristles at apex and only very short hairs between them, posterodorsally with one or two bristles near base; fore tarsi a little longer than tibiae, basitarsus nearly as long as half tibia, as long as next two segments. Mid femora on basal quarter ventrally with a long hair and four strong bristles which curve outwards, anteriorly at apex with two short bristles; mid tibia at point rather nearer $1/2$ than $1/3$ with a rather strong anterodorsal bristle, at $3/4$ with three small bristles at same level and a very strong anterodorsal bristle just below them, ventrally with a moderately strong apical bristle and with the anteroventral pubescence on apical quarter a little comb-like; mid tarsi very long, first two segments together longer than the tibia, basitarsus two thirds as long as tibia, a little shorter than remaining segments together. Hind legs simple, tibia with dorsal hairs on apical third a little outstanding but not to be compared with bristles. Abdomen shining, flattened at base and swollen at apex,

second tergite long, third, fourth and fifth a little shorter and subequal, five with some long bristles at apex, especially at sides; genitalia elongate, anal orifice about twice as long as broad, without long hairs or bristles on its margin, forceps hidden; pregenital sternite somewhat plough-share shaped, apical margin roundly produced and bent downwards, not emarginate, with short sparse bristles only. Type ♂ Kenya, Marakwet, Campi Cherangani, 3,000 m., March.

In DUDA's key (1925, p. 153) it runs down to the group of *L. luteilabris* Rdi. but differs from all the species there in its very long mid tarsi, dark face and arrangement of bristles on mid tibia. It is doubtful if its affinities with this group are at all close.

Leptocera (Limosina) species.

Two females belonging to this subgenus are in too bad condition to determine. One was captured at C. Arambourg, January; it probably belongs to the group of *L. crassimana* (Hal.). The other female I cannot place at all; its data are: — Kenya, Camp III on E. side Mount Elgon, Heath zone 3,500 m., January.

Leptocera (Peecilosomella) pictitarsis, n. sp.

Female. Black, buccae, centre of face and to a lesser extent vertex bluish-white dusted; mesonotum and scutellum black, moderately shining, bluish-white dusted; mesopleuron with a horizontal yellow mark at the level of the sternopleural bristle; mid-ventral region also largely yellowish; coxae and trochanters yellow, fore legs black, except for the second to fifth segments of the tarsi which are dead white; mid legs yellowish, femora with black rings at base and at $2/3$, mid tibia with black rings at $1/4$ and $3/4$, rings, especially the lower one, fairly well defined; hind legs with colour and pattern like mid legs, but basal ring of tibia at $2/5$. Halteres black, club dorsally a little whitened. Length 2 mm.

Lower part of face almost flat, no facial "knob" developed; head with normal bristles, four pairs of interfrontals, the inner verticals small situated on posterior not on dorsal surface of head, equidistant from outer vertical and ocellar bristles; antennae short, widely separated, arista about four times as long as antenna, with rather short hairs. Thorax with one very strong humeral bristle, two pairs of dorsocentrals and only 4-6 rows of acrostichals between them, four scutellars, scutellum a little broader than long, one moderately long sternopleural. Fore femora with a row of ventral bristles but no dense hairy clothing; fore tibiae with short hairs only; fore tarsi with first segment cylindrical, shorter than next two together, second to fifth segments rather flattened. Mid femora with no bristles except two antero-dorsal ones just before apex and a very small anterior and posterior one at apex; mid tibia at $1/3$ with a pair of bristles, the anterodorsal one the larger

and surmounted by a small bristle; at $2/3$ with three bristles at about the same level, the posterodorsal one much the strongest, a strong dorsal bristle just below these, ventrally with a strong apical; mid tarsi very long, longer than tibia, basitarsus longer than next two segments or half length of tibia. Hind legs without bristles. Wings (fig. 8) fuscous, a roundish hyaline mark towards apex of cell, another outside cell just dorsal to this and a curved one across R_{4+5} and M_{1+2} just beyond cell, apex a little lighter; costa not produced beyond R_{4+5} , second sector about as long as third; R_{2+3} and R_{4+5} bent gently onto costa, cell broad, dorsal apical angle a right angle with a distinct vein (M_{3+4}) beyond it; no trace of Cu_1 on dorsal margin of cell; alula small and narrow. Abdomen rather shining black, apparent second tergal plate (really the third) the biggest, a little shorter than third and

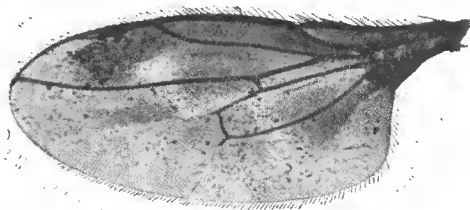


Fig. 8. Wing of *Lepocera pictilaris*, n. sp.

fourth together, third to fifth progressively shorter, cerci yellow, long, each with two very long woolly hairs, as long as second segment of mid tarsi; abdomen flattened, sternites about half as broad as tergites, sides of abdomen with no long bristles.

Male. Similar: wings with hyaline areas larger and tending to coalesce. Mid tibia with posterodorsal bristle at $1/3$ no bigger than anterodorsal one, the dorsal bristle of the three at $3/4$ missing, apical ventral bristle much shorter, some of internal ventral apical pubescence tending to form a comb. Abdomen with tergites two and four only a little broader than long, three a little shorter, tergites and sternites laterally rather numerous long bristles, genitalia large without long bristles.

Type ♀ Kenya, Marakwet, Campi Cherangani, 3,000 m., March. Allotype ♂ Kenya, E. side Mount Elgon, Suam fishing hut, 2,400 m. Paratypes 2 ♀♀ with same data as type.

DUDA (1925, p. 82 et seq.) describes three species of this subgenus with white fore tarsi but these have at least the third segment of the hind tarsi also white. The present species is aberrant in the subgenus in possessing the following characters: — thorax and scutellum not velvety black with paler spots, inner verticals not approximated to the outer verticals, acrostichals in less than eight rows, no rudiment of Cu_1 arising from the dorsal margin of the cell. The smallness of the bend at the apex of R_{2+3} is also rather unusual.

In most of the preceding characters the species is allied to the one next described. It is possible that they will eventually form a new subgenus. It will, however, be necessary to study the American forms placed in subgenus *Pterogramma* Spuler first.

Leptocera (Poecilosomella) giraffa, n. sp.

Female. Black, face and buccae somewhat reddish tinged; vertex dull black, central stripe and all areas from which bristles arise conspicuously silvery brown; antennae reddish brown; mesonotum greybrown with a black spot at posterior margin behind each dorsocentral and with lighter grey stripes, a pair (abbreviated behind) just inside the dorsocentrals, a pair (interrupted at suture) through the dorsocentrals and markings in the notopleural and alar depressions; scutellum dull brown with a black mark at centre of anterior margin; pleuron dull brown; legs brown, fore tibiae black, yellowish brown at base, hind femora pale on apical quarter, mid and hind tibiae with faint indications of two indistinct darker bands; abdomen rather shining black with a distinct milky-grey bloom; halteres entirely pale. Length 1.75-2.25 mm.

Lower part of face rather strongly transversely concave, mouth-edge a little produced, facial "knob" distinct, projecting a little beyond the eyes in profile. Head with normal bristles, 3-4 pairs of interfrontals, inner verticals small, intermediate in position between those of the *L. (P.) pictictarsis* and a normal member of the genus in which they are much nearer to the outer verticals than to the ocellars; antennae short, widely separated, arista four times as long as antenna, with rather long hairs. Thorax with one very strong humeral bristle, two pairs of dorsocentrals, eight rows of acrostichals between them, four long scutellars, scutellum semicircular, as long as broad, one moderately long sternopleural. Fore femora with a row of long widely spaced anterodorsal bristles, one ventral at base and three or four at apex, between these some much smaller bristles; fore tibiae with only short pubescence; fore tarsi with first segment nearly as long as the next three together, none of the segments much flattened. Mid femora with four short anterior bristles before apex and two short posterior ones at apex; mid tibiae at $1/3$ with a pair of long bristles, surmounted by another smaller pair, at $3/4$ with three bristles at about the same level, the two posterior ones much larger, the anterior one inserted rather proximally to them and often surmounted by a smaller bristle, ventrally with only a long apical bristle; mid tarsi long, first two segments together as long as tibia, basitarsus as long as the four remaining segments together, two thirds as long as tibia. Hind femur without bristles; hind tibiae with one rather strong dorsal bristle before apex, a little longer than greatest width of tibia and separated by a little more than its own length from apex of tibia. Wings (fig. 9) fuscous, with numerous yellowish-hyaline spots as follows: one embracing region of humeral cross-

vein and extending across M_{3+4} , one from centre of second costal sector to cross-vein rm , a sinuate fascia from apex of R_{2+3} to dorsal margin, area comprising apical fifth, a spot in centre and one at apex of cell, and an annular mark just dorsally to cell; costa not produced beyond R_{4+5} , second sector of costa about as long as third; R_{2+3} and R_{4+5} gently bent onto costa, R_{4+5} a little sinuous; cell moderately broad, M_{1+2} produced beyond it as a weak vein straight almost to margin, traces of M_{3+4} also present; no trace of Cu_1 on dorsal margin of cell; alula small and narrow. Abdomen flattened, apparent tergite two (really three) a little longer than third and fourth toge-

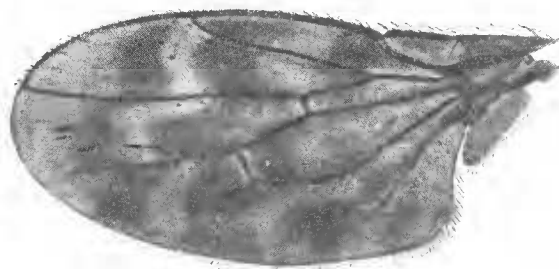


Fig. 9. Wing of *Leptocera giraffa*, n. sp.

ther, the two latter subequal, fifth a little shorter; tergites with only short bristles at sides; genito-anal cavity oval, higher than broad; cerci each with two or three rather short woolly hairs.

Male. Mid femora with a complete row of short anteroventral bristles; abdomen cylindrical, genitalia rather large, without any long bristles, outer forceps triangular with apex drawn out into a rather finer point; pregenital sternite with posterior margin straight.

Type ♀ E. side of Mount Elgon, Suam Fishing hut, 2,400 m., March. — Allotype ♂ with the same data. — Paratypes 2 ♂♂ 1 ♀ with the same data; — 1 ♀ Marakwet, Campi Cherangani, 3,000 m., March. Also the following paratypes in the collection of the British Museum: — 1 ♂ and 1 ♀ Abyssinia, Mount Chillalo, 13 Nov. 1926, forest *circa* 9,000 ft. = 2,770 m. (Dr Hugh Scott); 1 ♀ Abyssinia, Djem-Djem Forest, 21-29 Sept. 1926, 8-9,000 ft. = 2,460-2,770 m. (Dr Hugh Scott).

In DUDA's key (1925, p. 82), this species runs down to *L. (P.) longinervis* (Duda) of Formosa, but it has the wings very much more extensively dark-marked and the thorax quite a different colour; the absence of any trace of Cu_1 arising from the dorsal margin of the cell and the presence of a bristle before the apex of the hind tibiae also appear to be diagnostic.

Leptocera (Heteroptera) *serra*, n. sp.

Male. Black, head (except plates from which bristles arise), scutellum

and abdomen somewhat velvety; coxae apically pale tinged; wings hyaline, halteres yellow. Length 1.75 mm.

Head on each side with one vibrissa and no jowlar bristle even half as long. Antennae divergent, arista about three times as long as antenna, rather long haired. Four pairs of small interfrontal bristles, postverticals more than twice as large as the inner verticals, nearly as large as the ocellar bristles. One very strong and two weak humeral bristles, 8-10 rows of acrostichals, one posterior pair of dorsocentrals, no recognisable sternopleurals; scutellum a little longer than broad, with a pair of very long apical bristles (nearly twice as long as the scutellum) and a pair of basals about half the length

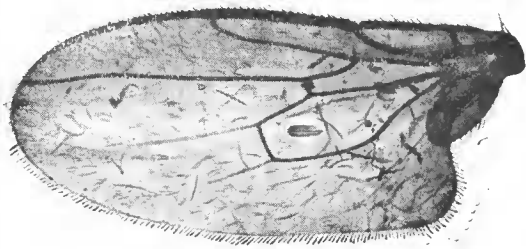


Fig. 40. Wing of *Leptocera serra*, n. sp.

of the apicals, surface covered with microchaetes. Wings (fig. 10) with first sector of costa with short hairs, dorsal member of basal pair of bristles long, twice as long as ventral member; second sector of costa a little shorter than the third; costa produced far beyond R_{1+5} ; R_{2+3} straight, abruptly curved onto the costa just before its apex; R_{1+5} nearly straight, a little bent towards the costa and then back again towards the end of the last sector, meeting the costa distinctly anteriorly to the wing-tip; M_{1+2} produced as a hyaline vein, slightly diverging from R_{1+5} , to wing margin; M_{3+4} produced well beyond *im* as a hyaline vein, production one and a half times as long as *im*; cell broad, *im* two-thirds as long as distance to *rm* along M_{1+2} ; alula rather broad and round. Fore legs simple. Mid femora with no strong bristles; mid tibiae with an antero-dorsal bristle at $1/4$, a pair of bristles at $3/4$, the antero-dorsal one the stronger and surmounted by a small bristle, a ventral bristle at $1/2$, no apical ventral bristle but a small apical anterior and posterior bristle; basitarsus about two-thirds as long as tibia, with one long ventral bristle near base and about five other smaller ventral bristles beyond it. Hind tibia with only short hairs; hind basitarsus without any hook or thorn. Abdomen rather narrow, male genitalia moderately small with one pair of long bristles above the anus, forceps hidden.

Type ♂ Kenya, E. side Mount Elgon, Elgon Saw Mill, Camp II, 2.470 m., December.

In DUDA's key (1925, p. 203) this species runs down best to couplet 2 as

regards wing characters (except length of M_{1+2}), but in other respects it agrees better with couplet 3. It does not appear to be closely allied to any described species.

Gen. **PARAPTILOTUS**, nov.

Wings and halteres absent; ocelli present, eyes moderately large; three or four similar interfrontal bristles, three superior orbitals, an external vertical, a small external occipital, a small internal vertical and an ocellar on each side. Mesonotum as broad as head with eyes, one long notopleural bristle, two pairs of dorsocentrals (one in front of the suture), scutellum semicircular with four long bristles, one long sternopleural. Mid tibiae with strong bristles. Abdomen as broad as the thorax, not strongly widened behind nor constricted at base, tergites with strong submarginal macrochaetes, abdomen not sharp-edged; no definite raised border to first tergal plate (= I + II). Genotype *P. chaetosoma* new species.

The most interesting part of Dr JEANNEL's collection consisted of a long series of apterous forms falling into two genera and nine species. Most of these specimens were captured in the zone of tree heaths at 3,500 m.; a few only as low as 2,470 m. In studying these wingless forms an opportunity was made to examine specimens of all the previously described apterous Sphaerocerids (except *Siphlopteryx* Enderlein). I have convinced myself that these fall into several genera which have all arisen independently from *Leptocera*, except possibly some of the Antarctic forms. A full discussion of this question is reserved for a later date when wingless forms other than those obtained by Dr JEANNEL will be dealt with.

Paraptilotus differs from *Aptilotus* in its unreduced scutellum with four long bristles, in the strong bristles of the mid tibia and in the long macrochaetes on the abdominal tergites.

Paraptilotus chaetosoma, n. sp.

Female. Black, shining; trochanters a little paler; jowls, face and vertex just above antennae reddish tinged. Length nearly 3 mm.

Head with mouth cavity very large, mouth parts apparently normally developed but rather smaller than usual, palpi narrow cylindrical but quite long, with one long bristle at apex; vibrissa long and strong, jowlar bristles all short, jowls at vibrissa a little narrower than width of third antennal segment, very wide posteriorly, the lower margin forming a right angle with the posterior margin which is almost as long as greatest width of eye; mouth-edge a little produced, no facial "knob"; antennae widely separated at base, second segment with unusually long bristles, third segment oval, arista long, 5-6 times as long as antennae, with rather short pubescence; vertex a little dull at sides but central area brilliantly shining, four pairs of interfrontal bristles, three supe-

rior orbitals increasing in size from in front backwards, the posterior one curved inwards, the other two outwards; further an outwardly curved external vertical, a weak external occipital arising near it and curved inwards, a weak convergent internal vertical arising a little nearer to the external vertical than to mid line of vertex; ocelli small but distinct, ocellar bristles strong with some short bristle-like hairs arising behind them; postocular hairs small, in an almost single row. Mesonotum about quadrate, with humeral and postalar calli distinct but suture weak, surface with long bristles and rather sparse microchaetes, shining black; on each side with one humeral one notopleural, 1 prealar, 1 supraalar, 3 postalar (one rather small), one dorsocentral just in front of scutellum and another (more widely separated from its fellow) in front of suture; 9-10 rows of microchaetes between the anterior dorsocentrals; scutellum large and flat, about one and a third times broader than long, bare, with four strong marginal bristles, the apicals rather more separated from one another than one of them is from a basal; mesopleuron dull, pollinose, with a shining area which includes a square area on the mesopleuron (DEs₂) which is narrowly separated from the dorsal and more broadly from the posterior margin, and a very narrow strip along the anterior margin of the sternopleuron (VEs₂), sternopleuron with one very strong bristle (nearly as long as the arista) and a few weak hairs below it; mediotergite (commonly called metanotum) with central division nearly obsolete, so that first tergite is separated from ventral surface of scutellum by a narrow membranous strip only. Fore femora with four posterodorsal bristles, 5-6 ventrals on apical two-thirds; fore tibiae simple, tarsi a little shorter than the tibia, first segment cylindrical, as long as next two together. Mid trochanter with no long upward-curving bristles; mid femora with a strong dorsal bristle at apex in front and behind, former preceded by three smaller bristles; mid tibiae with a pair of strong bristles at $1/3$, an even stronger pair at $3/4$ (the posterior one a little more proximal than the anterior one), the anterior one surmounted by a weak bristle and another rather stronger one which is more proximal and more anterior, the posterior one sometimes surmounted by a very weak bristle; tibia ventrally with a long apical bristle; mid tarsi a little longer than the tibia, basitarsus half as long as tibia, as long as next two segments together, with no strong bristles. Hind femora and tibiae without bristles, tibia at apex ventrally with a minute spur, not half as long as apical width of tibia; hind tarsi with basal segment not very much expanded, second segment nearly twice as long. Abdomen rather longer than head and thorax, rather flattened above, concave below, tergites deflexed and almost hiding sternites, abdomen with no distinct sharp margin, outline oval, posteriorly truncated; first two tergites completely fused, at apex nearly twice as wide as long, third, fourth and fifth tergites subequal, half as long as $1 + 2$; surface strongly shining with fine microchaetes and long outstanding bristles (as long as the apical scutellars), four just before the posterior margins of second, third and fourth tergites and fifth (wea-

ker); cerci narrow, dark, with three moderately long woolly hairs and three or four very short ones at apex; sternites almost hidden, narrow black and shining, without long hairs.

Male. Exactly like the female but smaller; abdomen more cylindrical; tergites deflexed but not covering the sternites, except almost so in the case of the first two; fourth sternite with a row of dense, short, outstanding bristles and one longer one on each side at apex; fifth sternite as long as fourth, with basal part dull and covered with dense, short, outstanding bristles, these followed by a shining area at apex with two or three longer bristles on each side and a row of flattened comb-like short bristles, somewhat bent over the margin; genitalia large, rather shining, with no long bristles, anus suboval.

Type ♀ Kenya, Camp III of Mount Elgon, E. zone of tree-heaths, 3,500 m., Jan. — Allotype ♂ with the same data. — Paratypes 6 ♀♀ with same data as the type (one very small, 1.75 mm. long, but immature); 3 ♂♂ with same data as type (two very small and immature).

* The area of the mediotergite exposed seems to depend partly on the swollen or deflated condition of the abdomen. The macrochaetes on the abdominal tergites are small in some specimens.

Paraptilotus brunneisternum, n. sp.

Male. Resembles *P. chaetosoma* n. sp. except: Size smaller, length 2 mm.; outstanding bristles at end of fourth sternite less dense and more hair-like; outstanding bristles of fifth sternite not separated from apex by a shining area, but divided into two patches, with disc bare, sternite with no longer outstanding bristles at apex (only the comb of flattened bristles).

Black, legs, except the fore tarsi, and ventral half of the thorax reddish testaceous (upper boundary of the pale colour runs just above the suture between the mesopleuron and sternopleuron (DEs_2 and VEs_2)). Mesonotum a little dull, microchaetes sparser, not in rows. Abdomen moderately shining, covered throughout with a distinct reddish brown tomentum; microchaetes much sparser, none on disc of fourth tergite.

Type ♂ Kenya, Camp III of Mount Elgon, E. zone of tree-heaths, 3,500 m., January. Paratype ♂ with the same data.

Paraptilotus flavipes, n. sp.

Male. Resembles *P. chaetosoma* n. sp. except: Size smaller, length 1.75-2.00 mm. Outstanding bristles of fourth sternite in a group on each side of apical third (not a row across apex), disc bare and shining; fifth sternite very short, less than half as long as fourth, shining, with a few short bristles on each side at apex and an apical comb.

Male and female. Black; legs reddish testaceous, fore tibiae and tarsi a little darkened. Jowls and face somewhat reddish tinged; whole vertex

shining, the orbits not being perceptibly dulled; microchaetes on mesonotum sparser, only 5-6 irregular rows between the anterior dorsocentrals; shining area on mesopleuron (DEs_2) larger, extending to both its dorsal and anterior margins; convex part of the pteropleuron (lateral part of mediotergite) shining, without tomentum.

Type ♂ Kenya, Camp III of Elgon, E. zone of tree heaths, 3,500 m., January
Allotype ♀ and 5 ♂♂ and 5 ♀♀ paratypes with the same data.

Gen. **OCELLIPSIS**, nov.

Wings, halteres and ocelli absent, eyes more or less reduced; 4-5 minute interfrontals, no superior orbitals, one external vertical, one microscopic or no external occipital, no internal vertical or ocellar, on each side. Mesonotum a little broader to a little narrower than the head with eyes, notopleural bristle small, one pair of posterior dorsocentrals, scutellum small, two and a half times as broad as long, with a pair of strong basal bristles and a pair of minute apicals (absent in some species), sternopleural bristle very weak. Mid tibiae with only very weak bristles. Abdomen subcircular, two to two and a half times as broad as thorax, constricted at base into a distinct short neck, sides of first tergal plate (I + II) with a distinct raised margin, segments without macrochaetes.

Genotype *O. cyclogaster* n. sp.

This is one of the most evolved of the wingless offshoots of *Leptocera* in which the reduction of the thorax and the increase in size of abdomen have progressed very far. If the habitat were not known one might have supposed the species to be an inhabitant of caves.

The reduction of the scutellar bristles to a single pair occurs in several of the apterous genera, but in some cases it is the basal in others the apical pair which disappears.

Ocellipsis cyclogaster, n. sp.

Female. Black, dull; head, except brown apical part of third antennal segment and brown-yellow posterior part of vertex, and all legs (including coxae) yellow. Tips of fore and hind tibiae faintly browner. Length 2 mm.

Head with mouth-cavity moderately large, mouthparts rather small, palpi apparently normally developed; vibrissa fine, of moderate length, a row of minute hairs along oral margin with the hair nearest the vibrissa about one-third its length, a group of minute hairs also on jowls, the one nearest the vibrissa about one-third its length; jowls dull, at vibrissal angle a little broader than third antennal segment, very wide posteriorly, where angle with the back of head is about a right angle; eye small, facets rather coarse, longitudinal diameter about one and a half times the vertical one which is no more than two and a half times the width of the third antennal segment,

inner eye-margin at level of antennae with a slight emargination; mouth-edge a little produced, face quite flat and a little shining, no facial "knob"; antennae rather widely spaced at base, diverging at about ninety degrees, third segment oval, arista dorsal, about three times as long as antenna, with rather short pubescence; broad central area on vertex shining, orbits themselves rather dull, narrow area between them and central area very dull, interfrontal bristles minute, five pairs just inside edge of shiny area; vertex posteriorly rounded. Mesonotum in dorsal view subcircular, a little broader than the head with eyes and one and a half times as long, surface absolutely dull, moderately convex, suture and humeral calli obsolete, postalar calli very weak, depression in front of scutellum shallow, bristles present on each side are one small notopleural, one long prealar, one rather short and one strong postalar, one dorsocentral a little way in front of the scutellum; microchaetes in rather widely spaced rows, about twelve rows between the prealars; scutellum small, very transverse, two and a half times as broad as long, with a pair of strong basal bristles, apical bristles represented by minute hairs; mesopleuron dull, bare, sternopleuron (VEs₂) with one weak bristle; central part of mediotergite (so-called metanotum) distinct. Legs rather short and thick, fore femora regularly thickened, with rather short, outstanding pubescence (shorter than diameter of femur); fore tibia with short outstanding pubescence of which about three dorsal hairs towards apex are almost bristle-like, twice as long as thickness of tibia; fore tarsi as long as tibia, basitarsus a little longer than next two segments together, each tarsal segment with a postero and antero-dorsal bristle which is rather longer than usual. Mid femora with only very short pubescence and a short anterior bristle just before apex; mid tibia with a short dorsal bristle just before $1/2$ and a pair at $3/4$, ventral apical bristle short; tarsi a little shorter than the tibia, basitarsus longer than next two segments together. Hind legs with only short pubescence, tibia with a short, straight, apico-ventral spur, tarsi with second segment a little thickened, only one-third longer than basitarsus. Abdomen convex, in dorsal view constricted basally into a short neck, widening very strongly to end of very large first tergal plate (= I + II), apical margin of which is two and a half times as broad as thorax, median length of this plate as long as head + thorax and equal to three-quarters of length of abdomen; third tergite as broad as apex of I + II but very short; fourth tergite narrower, crescentic; fifth similar but still narrower; sixth and seventh only visible on ventral surface; side of I + II with a strong lateral margin; sternites large, fully sclerotized, overlapped by tergites, connecting membrane not visible; first sternite (= I + II) large, third to seventh all broad but short; ano-genital cavity entirely ventral (not apical), closed by three small plates, two lateral ones and a ventral, more shining one, posteriorly (dorsally) with a small yellow plate (representing the fused cerci) between the two lateral plates; tergites dull, sparsely pollinose, with short, rather sparse, pubescence.

Type ♀ Kenya, Camp III of Mount Elgon, E. zone of tree-heaths, 3,500 m., January.

Ocellipsis verruciger, n. sp.

Female. Resembles *O. cyclogaster* except: — Antennae brown throughout, fore tibiae and first two tarsal segments dark brown, hind tibiae pale at tip. Length 2,25-2,5 mm.

Mouthparts perhaps a little larger, palpi of normal size, with a short bristle at apex; hairs on jowls other than vibrissa all microscopic; arista about three and a half times as long as antenna; external occipital not developed. Mesonotum one and a quarter times as broad as head with eyes, surface rather shiny, with closely set, small "warts" from which very short but rather stout bristles arise, surface between with very sparse tomentum, macrochaetes (mostly damaged) apparently the same, except for one small humeral and one small postalar in addition; the warts are not really in rows, but there are 20-30 between the prealars; scutellum with fine tomentum only, apical bristles equally minute; mesopleuron dull, densely tomentose, pteropleuron (lateral part of mediotergite) a little more shining, sternopleural bristle very short. Fore femora less thickened, pubescence shorter and denser, tibia with no hairs longer than width of tibia, tarsi with no long dorsal bristles; mid tibia with bristle between $1/3$ and $1/2$, posterior bristle of lower dorsal pair bigger than the anterior one. Second segment of hind tarsi a little longer, one and a half times as long as basitarsus. Abdomen very convex, in dorsal view oval (not truncate posteriorly), first tergal plate (= I + II) at apex only twice as broad as thorax, a little shorter than head + thorax, only forming three-fifths of length of abdomen; third tergite one-third length of I + II, fourth a little shorter, fifth very short and crescentic; sixth just visible apically, seventh not visible; tergites forming a sort of carapace inside which the sternites are somewhat sunk; connecting membrane narrowly visible at sides; seven sternites visible, only I + II large, surface of all rather shiny; ano-genital cavity small and transverse, with a single plate (two fused cerci) protruding and bearing a number of rather short woolly hairs; tergites moderately shiny, sparsely pollinose, with only very short bristles (much shorter than in *cyclogaster*); sixth tergite smooth and brilliantly shining.

Male. Similar: sixth tergite (last visible) rather densely tomentose; sternites third to fifth with more obvious outstanding bristles on posterior margin of disc; fifth sternite weakly emarginate over central quarter; genitalia rather large, with short pubescence only, anus oval, divided by a raised sclerotised ridge, outer forceps small, acutely pointed, no larger than second segment of hind tarsi.

Type ♀: Kenya, Camp III of Mount Elgon, E. zone of tree-heaths, 3,500 m., January. Allotype ♂ and 3 ♂♂ 3 ♀♀ paratypes with the same data.

Ocellipsis lonchomma, n. sp.

Female. Resembles *O. cyclogaster* except : — Brilliantly shining ; head and legs entirely yellow. Length 1,3 mm.

Hairs on jowls and oral margin all very short, except vibrissa ; jowls moderately shining, at vibrissal angle fully one and a half times as broad as the third antennal segment, oral margin with a raised edge which is continued in a regular curve to half way up posterior margin of head which is rounded, not straight (in profile) ; eye larger, elongate, long axis horizontal, about twice as long as vertical diameter, a small emargination just above antennae and another on middle of lower margin ; facial " knob " quite strongly protruding ; shining central area of vertex broader, lateral areas almost equally shining, back of head sharp-edged (in two previous species rounded), no external occipital bristle. Mesonotum rectangular, nearly twice as broad as long, not quite as broad as head with eyes, not longer than head, surface strongly shining, rather flat, macrochaetes similar but all very weak and short except the large one on the postalar callus, microchaetes not in rows, so sparse as to be hardly noticeable ; scutellum with two strong converging basals, as long as basal width of scutellum and no apicals ; mesopleuron pollinose, almost woolly, with a strip at top of mesopleuron (DEs_2) shining, sternopleural bristle absent. Fore tibia with no pubescence longer than diameter of tibia, fore tarsi very short and thick, first segment not more than twice as long as broad, as long as next two segments (which are quadrate) together, no long bristles on dorsal surface. Mid tibiae with bristles very short, apico-dorsally with only a single anterodorsal one which is separated from apex by its own length. Abdomen very convex, in dorsal view almost circular, anterior neck indistinct, abdomen widest at end of first tergal plate (= I + II) which is fully two and a half times as wide as thorax, median length about as long as head + thorax, equal to three-fifths the length of abdomen ; third tergite as broad as first plate but one-third as long ; fourth, fifth, sixth and seventh each narrower and shorter ; all tergites up to and including the fifth with sharp margins ; sternites broad, sunk inside the tergites, lateral connecting membrane narrow, first plate (= I + II) large and dull, third to sixth broad but short, shining ; seventh crescentic, twice as long as sixth and dull, pollinose ; ano-genital cavity small and transverse with a narrow central (more ventral) shining plate and two lateral plates which are small and pollinose, cercal plate very small, with short pubescence. Tergites brilliantly shining with very short and very sparse pubescence.

Male. Fore tibiae a little incurved at tip. Abdomen with only five clearly visible unmodified tergites and sternites ; fifth sternite pollinose at sides with a comb of about five rather long backwardly-directed bristles on each side, a little emarginate between the two combs, sternites otherwise shining with very short sparse pubescence ; genitalia rather large, anus oval, central

ridge weak, sometimes not developed ; outer forceps rather short and broad, subtriangular.

Type ♀ Kenya, Camp II of Mount Elgon, E. zone of tree-heaths, 3,500 m., January. Allotype ♂ Kenya, Elgon saw mill, Camp II E. side of Mount Elgon 2,470 m., Dec. Paratypes 6 ♂♂ and 3 ♀♀ with same data as type.

Ocellipsis Jeanneli, n. sp.

Female. Very close to *O. lonchomma* but differs as follows : — Legs brown, femora indeterminately blackish at base, tibiae indeterminately blackish at apex. Length 1,3 mm.

Arista a little longer. Mesonotum a little duller, with much more numerous, though still sparse, microchaetes. Fore tibiae a little incurved at apex. Mid tibia with dorsal bristle at $3/5$ longer, nearly twice as long as diameter of tibia. Seventh sternite narrow, no longer than the sixth ; ano-genital cavity with a central shining plate which is transverse.

Type ♀ Kenya, Marakwet, Campi Cherangani, 3,000 m., March.

Ocellipsis melanocephala, n. sp.

Female. Resembles *O. cyclogaster* except in the following particulars : — Black, shining, head (except antennae) black ; legs yellow, fore tibiae brown black. L. 1,5-1,75 mm.

All jowlar bristles, except vibrissa, microscopic ; jowls shining ; eyes moderately large, vertical diameter fully three times width of third antennal segment, outline about circular with a small emargination just above antennae ; no facial " knob " ; vertex with triangular central area smaller, orbits narrower and shining, intervening area a little dull, traces of minute superior orbitals and inner verticals, outer verticals strong and directed forwards. Mesonotum little broader than head, only one and a quarter times as long, surface shining, one rather strong supraalar in addition on each side, microchaetes in very irregular rows, about fifteen between the prealars ; basal scutellar bristles considerably longer than the basal width of scutellum, no apicals ; mesopleuron dull, pollinose, almost woolly, with a large triangular bare shining patch at the top (of DEs_2). Pubescence on fore tibia and tarsus short, none longer than diameter of tibia. Dorsal bristles of mid tibia long, longer than diameter of tibia, anterior one of lower pair very small. Abdomen very convex, in dorsal view oval with a short neck, widest at apex of first tergal plate (= I + II), apical margin of which is twice as broad as thorax, median length equal to three-fifths length of abdomen ; third tergite about one-quarter length of I + II, fourth to seventh progressively shorter, sixth and seventh visible dorsally, sides of I + II and of third with a defined margin ; sternites large, deeply sunken into tergites, lateral connecting membrane narrow, genitalia in all females hidden by gum ; tergites shining, with rather sparse but quite distinct short bristles.

Male. Third to fifth tergites normal, short, shining; sixth only visible on left side, pollinose; basal sternites shining, fourth and fifth deeply emarginate, sixth visible at each side only, pollinose, with short outstanding bristles in centre of apical margin; genitalia rather large, dull pollinose, with no long bristles, anus circular without central ridge, outer forceps rather broadly triangular.

Type ♀ Kenya, Marakwet, Elgeyo escarpment, 2,500 m. Allotype ♂ Kenya Marakwet, Campi Cherangani, 3,000 m., March. Paratypes 2 ♂♂ 3 ♀♀ with same data as type and 3 ♂♂ with same data as allotype.

Ocellipsis alutaceus, n. sp.

Male. Black, mostly shining; clypeus and mouthparts testaceous; antennae brown; legs reddish testaceous, fore tibiae except basal quarter and fore basitarsus, dark brown, other tarsal segments a little darkened. Length 2 mm.

Resembles *O. cyclogaster* except in the following particulars: — Bristles along the oral margin all small, bristles on jowls small, those nearest the vibrissa at most one third its length; jowls strongly shining; eyes a little larger; face shining; vertex brilliantly shining with orbits narrowly dull, about four pairs of minute interfrontals. Mesonotum in dorsal view subcircular, about as broad and about one-third longer than head with eyes, surface strongly shining, bristles short, prealar bristle very small, microchaetes numerous, in about sixteen irregular rows; scutellum small, twice as wide at base as long, bare and shining, basal bristles one and a half times as long as basal width of scutellum, apicals absent; mesopleuron (DEs₂) dull and pubescent, sternopleural (VEs₂) bristle very small, central part of medio-tergite (so-called metanotum) better developed than in other species. Fore tibia a little clavate, pubescence short, a little longer ventrally than dorsally; tarsi a little shorter than the tibia, dorsally with pubescence rather shorter than in *cyclogaster*. Mid femora with an antero-ventral row of widely spaced bristles as long as diameter of femur and a posteroventral one twice as long; mid tibia with no dorsal bristle near base, at 3/4 with one little longer than diameter of tibia, at apex with a short ventral bristle and very short anterior and posterior ones. Abdomen in dorsal view a distinct basal neck, long oval, broadest at end of first tergal plate (= I + II), apical margin of which is one and a half times as broad as thorax, median length a little shorter than that of head + mesonotum, only a little longer than half the length of abdomen; third tergite as broad as apex of I + II, but very short, only one-fifth its length; fourth and fifth tergites a little shorter and narrower; sixth only visible on left side; sternite I + II making up fully half the length of abdomen ventrally, third and fourth sternites short, unmodified, all with rather distinct outstanding pubescence; fifth sternite with small apical emargination and with a rather large apico-discal patch of dense,

outstanding, short, black bristles; genitalia small, with no long bristles, anus circular, without central ridge, outer forceps testaceous, small, rounded-triangular; tergites distinctly dull, with a microscopic network of fine lines and rather dense microchaetes, but no macrochaetes; sternites shining.

Type ♂ Kenya, Camp III of Mount Elgon, East zone of tree-heaths, 3,500 m., January. Paratypes 3 ♂♂ with the same data.

The following key will serve to separate the six preceding species.

1. Head bright yellow, vertex posteriorly straight and sharp-edged. 2.
- Head brown or black at least posteriorly, vertex posteriorly rounded. 3.
2. Legs yellow. Dorsal bristles of mid tibia very short. Microchaetes of mesonotum very sparse. **O. lonchomma.**
- Legs brown, femora and tibiae darker at base and apex respectively. Dorsal bristle on mid tibia at 3/5 twice as long as diameter of tibia. Microchaetes of mesonotum denser. **O. Jeanneli.**
3. Mesonotum granulate, microchaetes arising from small warts. **O. verruciger.**
- Mesonotum not granulate. 4.
4. Mesonotum and abdomen densely pollinose. **O. cyclogaster.**
- Mesonotum shining. 5.
5. Abdomen shining. Legs yellow, fore tibiae black. **O. melanocephala.**
- Abdomen alutaceous, dull. Legs brown, fore tibia partly black. **O. alutaceus.**

Gen. **Copromyza** Fallén, 1820 (*Cypsela* auct.).

Subgen. *Gymnometopina* Hedicke, 1923.

DUDA (1923) in his paper on the old world species of *Borborus* (= *Copromyza*) established two primary divisions of the genus which he called Sections *Chaetonota* and *Trichionota*. The new species described in the present paper is a member of the second section but is so nearly intermediate that I think it is inexpedient to maintain these sections any longer. The three subgenera placed in the *Trichionota* fall under the subgroup "Inermes" and DUDA'S key to that group may be modified as follows to include them.

1. Hind tibia with an anteroventral bristle below the middle or with bristles along its whole length. (Scutellum with four bristles and otherwise only with microscopic hairs). 2.
- Hind tibia with no anteroventral bristle and not with bristles along its whole length. 2 A.
- 2 A. Third antennal segment conically elongate, arista subapical. Vertex very short and broad. (*Dolichocera* Duda nec Latreille) Subgen. **Dudaia** Hedicke, 1923.
- Third antennal segment rounded, arista dorsal. 2 B.

- 2 *B.* Hind tibia with no apical spur. Scutellum with six marginal bristles (*Gymnothorax* Duda nec Bloch and Schneider) Subgen. **Achaetothorax** Hedicke, 1923,
 — Hind tibia with an apical spur or else the scutellum has one long and three short bristles on each side..... 2 *C.*
- 2 *C.* Scutellum with four almost equally large marginal bristles and otherwise only the most microscopic pubescence. (*Gymnometopa* Duda nec Coquillet)..... Subgen. **Gymnometopina** Hedicke, 1923.
 — Scutellum with short bristles between the four long ones.....3.

Copromyza (Gymnometopina) Jeanneli, n. sp.

Female. Black, mesonotum laterally faintly brownish; antennae brownish, paler beneath third segment; legs yellow-brown, apical half of hind femora nearly black. Halteres whitish. Length 3 mm. Length of one wing 3.5 mm.

Head shining, vibrissa long, jowls with short hairs, the largest not one-quarter as long as vibrissa, jowls at narrowest point about one-third as broad as vertical diameter of eye. Surface of head above antennae entirely shining; interfrontals arising from shallow depressions which converge forwards but do not meet, five minute bristles in each row; other head bristles typical for the genus, postocular bristles in a single row more or less reduplicated below; third antennal segment of the usual irregular oval shape, arista about three times as long as the antennae, with rather long hairs. Mesonotum and scutellum thinly pollinose (about as in *C. nitida* Mg.), moderately shining; 1 + 2 weak dorsocentrals with microchaetes tending to complete the row of dorsocentrals; between them two rows of acrostichals; the intralar row developed, the presutural member moderately strong; mesopleuron brightly shining, without bristles and not pollinose except on the pteropleuron (lateral part of the mediotergite); scutellum a little broader than long, with four moderately strong bristles, apicals about as long as the scutellum. Fore legs with rather dense short pubescence but no bristles; fore basitarsus with an apical hook. Mid legs pubescent, the only bristles being an antero- and a posterodorsal one just before apex and a short apical ring on the tibia. Hind legs pubescent, without bristles, tibia at apex with ventral curved hook not quite as long as basitarsus, and a small, thorn-like, anteroventral apical bristle; tibia with a preapical dorsal hair which is nearly apical and more than twice as long as diameter of tibia; tibia not at all unusually thickened. Wings with typical *Copromyza*-venation (as in *C. equina* Fall.) but last section of M_{1+2} only three-quarters as long as the penultimate. First abdominal tergite (= I + II) trapezoidal, more than twice as wide posteriorly as long down median line, shining, finely pollinose, with only a few long hairs at sides; third and fourth tergites two-thirds as wide as I + II, both very short (only one-third as long); fourth tergite a little narrower but longer; fifth narrow, subqua-

drate; cerci projecting, yellowish with some long bristly hairs; only extremely narrow central area of sternites sclerotized.

Type ♀ Kenya, East side Mount Elgon, Suam fishing hut, 2,400 m., March.

This species appears to belong to the subgenus *Gymnometopina* Hedicke. The two previously described species *C. clunicrus* (Duda) and *C. aptus* (Curran, 1931) both have very thick hind tibiae. The present species agrees with them in other characters, except that the thorax is more pollinose.

Gen. **SPHAEROCERA** Latreille, 1804.

Sphaerocera (s. str.) **Jeanneli**, n. sp.

Male. Black; antennae brown; fore coxae and fore tarsi (except basal three-quarters of basitarsus) whitish yellow; rest of legs testaceous, fore tibia, base of fore basitarsus, apical third of hind femora, brown-black; halteres white; wings hyaline. Length 2 mm. Length of one wing 2 mm.

Head essentially as in *S. monilis* Hal. with jowls smooth and shining; mouth-edge flatter and less produced; vibrissa similarly arising from a small tubercle high above mouth-edge; antennal sockets similarly separated by a rather narrow keel; arista bare, about six times as long as antenna; vertex flat, bristles much more reduced than in *S. monilis*, central part less produced in front of eyes, vertex dull, central area a little more shining, alutaceous; ocelli very small, almost rudimentary, rather smaller (relatively) than in *S. monilis*; bristle-bearing prominences behind the eyes hardly developed. Thorax rather shining, with only the faintest tomentum and pubescence, not even traces of macrochaetes indicated; mesonotum unusually convex, humeral and postalar calli large and prominent, convex; prescutellar depression deep; scutellum small, about twice as wide as long, with close fine punctures and no traces of scaly hairs, margin with one small tubercle on each side; mesopleuron even more shining than mesonotum, practically without pubescence. Wing venation exactly as in *S. monilis* and *S. subsultans*. Fore femur not thickened; fore tibia unusually thin at base and a little thickened at apex, fore tarsi not broadened. Hind femur very long and thin, as long as the tibia; hind tibia at apex ventrally with a rather long curved spur, a little longer than the diameter of the tibia; hind basitarsus not emarginate beneath the base (as in *S. subsultans*), a little longer than the second segment. First two abdominal segments (= I + II) trapezoidal, posterior margin one and two-thirds times as long as central length; three following tergites of equal length (= two-thirds length of I + II), progressively narrower, so that the last is quadrate; genitalia not conspicuous dorsally; anterior sternites narrow, but the last two nearly as broad as their tergites; outer forceps ventrally produced into long, narrow, finger-shaped processes, which lying along the ventral side of the abdomen reach a point a little

anterior to posterior margin of tergite I + II; the finger-shaped process in lateral view almost eight times as long as broad.

Type ♂ Kenya, East side Mount Elgon, Elgon Saw mill, Camp II, 2,470 m., December.

This species belongs to *Sphaerocera* s. s. (as defined by me, 1930, p. 274) and is remotely allied to *S. monilis* Hal. The male genitalia, however, seem very different from anything that has been described.

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